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CONTENTS:

Isanthus brachiatus in the Flora of Connecticut. *J. F. Smith* . . 189

Sparganium multipedunculatum in eastern America.

M. L. Fernald 190

Limodorum tuberosum L. *K. K. Mackenzie* 193

The arctic Variety of *Alopecurus aequalis*. *M. L. Fernald* 196

Further Cases of Inconstancy in Color-forms. *A. E. Carpenter* 199

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THE RESTORATION OF ISANTHUS BRACHIATUS TO THE FLORA OF CONNECTICUT.

JESSE F. SMITH.

IN his interesting and illuminating article on John Pierce Brace in RHODORA for May 1914 (vol. 16, no. 185), Mr. C. A. Weatherby wrote concerning Brace's herbarium and his record of plants growing in Litchfield and vicinity:

"The record which we should most like to verify is that of *Isanthus brachiatus*. The claim of that species to admission to the Connecticut flora rests on Mr. Brace's list and a specimen of Charles Wright's at the Gray Herbarium. The latter is marked as from Wethersfield, but the accuracy of its label is under suspicion. Mr. Brace's single specimen is *Isanthus* without doubt; but it was collected in Ohio by Sullivant. One can hardly base a Connecticut record on such evidence; someone will still have to collect *Isanthus*."

Quite by accident the fortune of being the "someone" prophetically referred to by Mr. Weatherby has fallen upon the writer. On the 31st of last August three specimens of what proved to be *Isanthus brachiatus* were collected in Suffield, Conn.; but the collector, not realizing the significance of the find, did not take particular note of the locality nor search for other specimens. After the specimens had been verified at the Gray Herbarium a second visit was made to the locality on September 26. This visit resulted in the discovery of a colony covering an area of a square rod. A killing frost, which had occurred the previous night, had not injured the plants and several were found still in bloom.

These plants were growing on the floor of an abandoned quarry, close to the so-called Enfield Canal, which extends along the west bank of the Connecticut river from just below Thompsonville to Windsor Locks. About three miles north of Windsor Locks two

small quarries were opened about one hundred years ago to supply the rock needed in the construction of the canal and the dam across the river. These quarries have been used little, if any, since that time. In the northernmost of these quarries, in soil that is practically nothing but disintegrated shale, produced by the erosion of the exposed and weathered rocks which form the northern and western sides of the quarry, *Isanthus brachiatus* has found a congenial home.

This finding of *Isanthus* at Suffield, twenty-five miles up the Connecticut river from Wethersfield, removes the taint of suspicion from the label on Wright's Wethersfield specimen and furnishes contributory evidence of the authenticity of Brace's record for this plant in Litchfield in 1822.

SUFFIELD SCHOOL, Suffield, Connecticut.

SPARGANIUM MULTIPEDUNCULATUM IN EASTERN AMERICA.

M. L. FERNALD.

WHEN Dr. A. J. Eames and I¹ studied the genus *Sparganium* in 1907, we recognized *S. simplex* Hudson as occurring from Newfoundland to British Columbia, south to Maine, Vermont, Colorado and California, with a poorly understood var. *multipedunculatum* Morong occurring from Mackenzie to Colorado and California. Characteristic sheets of the American plant which was passing in the East as *S. simplex*, in the West as *S. multipedunculatum* (Morong) Rydberg, were referred to the great student of the group, the late Professor Wladislaw Rothert, and they all brought from him such notes as the following:

"*S. affine* Schnitzl. (*S. angustifolium* Michx. of the American authors), typicum; forma robustior, foliis latis," or "Dubious. Intermediate between *S. simplex* Huds. and *S. affine* Schnitzl., nearer to *S. simplex*" or, on a Californian sheet, "Most of the Western specimens are clearly different from the European *S. simplex* Huds., and intermediate between this and *S. affine* Schnitzl. (*S. angustifolium* Michx. of the American authors), with individually different combinations of the characters of both. I have marked them as 'dubious.' Many of these 'dubious' specimens have been determined by Rydberg as *S. multipedunculatum* Rydb. or 'var. *multipedunculatum* Morong.'

¹ RHODORA, IX. 89 (1907).

It is not quite impossible that they are indeed a separate species, peculiar to the West of North America: but I am not able to find any characters of their own, constantly distinguishing them both from *S. simplex* and from *S. affine*; consequently I am rather inclined to consider them as non-hybrid transition forms between these two species. Most of the specimens do not fit Morong's description of his var. *multipedunculatum*."

That this intermediate American plant, an extreme specimen of which formed the basis of *S. simplex*, var. *multipedunculatum* Morong, is not satisfactorily referred to the European *S. simplex* is clear. The latter species has the linear-filiform stigmas commonly 2 mm. or more long and the staminate half of the inflorescence with 3-6 mostly remote heads; the "dubious" *S. multipedunculatum* having the thickish stigmas 1-1.8 mm. long and the 2-4 staminate heads approximate. In the latter character and in the form of its stigmas the "dubious" plant is close to *S. angustifolium* Michx. (*S. affine* Schnitzl.) and in my latest treatment¹ of the *Sparganiums* of northeastern America I treated the eastern material as broad-leaved *S. angustifolium*. During the past summer, however, after repeatedly seeing the latter species, Messrs. Bayard Long, K. M. Wiegand and I collected the broad-leaved plant in brooks at Blanc Sablon, Labrador and in the field it was so unlike *S. angustifolium* that a new study of it has been made. This results in the recognition in eastern America of *S. multipedunculatum*, a species heretofore considered distinctive of western North America. From *S. angustifolium* it at once differs in its coarser habit; its broader and flatter leaves which are scarcely dilated at base and which (seen by transmitted light) have much more remote nerves, larger fruiting heads and longer stigmas. In the East *S. multipedunculatum* occurs from southern Labrador to Lake St. John and south to Sable Island, Nova Scotia, Knox and Franklin Counties, Maine, Cheshire County, New Hampshire, and Orleans County, Vermont. Superficially it sometimes resembles coarse forms of *S. chlorocarpum* Rydberg, but that species differs in its more numerous and scattered staminate heads and in having the summits of the longer-beaked fruits ribbed.

The diagnostic characters of the three species, *S. chlorocarpum*, *S. angustifolium* and *S. multipedunculatum*, and a citation of eastern specimens of the latter are given below.

¹ RHODORA, xxiv. 31-34 (1922).

- Staminate half of inflorescence 2-10 cm. long, of 4-9 mostly scattered heads (if shorter and with fewer heads, the plant very low and with erect lower bracts): fruit distinctly ribbed at summit between the 3 angles; its beak about equaling the body: tips of sepals appressed to the fruit: plants commonly erect and emersed.....*S. chlorocarpum*.
- Staminate half of inflorescence 1-3 cm. long, of 1-4 (rarely—6) mostly crowded heads: fruit only faintly if at all ribbed between the often obscure angles; its beak much shorter than the body: tips of sepals loosely ascending or spreading: plants commonly aquatic and with long floating leaves and lower bracts.
- Leaves rounded on the back, 1.5-4 (rarely—5) mm. wide; the middle and upper ones and the bracts with dilated and subinflated sheathing bases; the strong nerves of the principal ones (seen on under surface) mostly 0.2-0.8 mm. apart: pistillate heads 1-3, in maturity 1.2-2 cm. in diameter: stigmas 0.6-1.5 mm. long.....*S. angustifolium*.
- Leaves flat and ribbon-like, scarcely dilated or inflated at base, 5-12 mm. wide; the strong nerves of the principal ones 0.8-2 mm. apart: pistillate heads 1-5, in maturity 2-2.5 cm. in diameter: stigmas 1-1.8 mm. long.....*S. multipedunculatum*.

SPARGANIUM MULTIPEDUNCULATUM (Morong) Rydberg, Bull. Torr. Bot. Cl. xxxii. 598 (1905). *S. simplex*, var. *multipedunculatum* Morong, *ibid.* xv. 79 (1888). *S. simplex* of recent eastern Am. authors, not Huds.—Lakes, ponds and pools, southeastern Labrador to Alaska, south to Newfoundland, Nova Scotia, Maine, New Hampshire, northern Vermont, Colorado and California. The following eastern specimens belong here. LABRADOR: brooks entering Blanc Sablon River, *Fernald, Wiegand & Long*, no. 27,315. NEWFOUNDLAND: Virginia Water, *St. John's, Robinson & Schrenk*, no. 200; muddy ponds, Chimney Cove, *Waghorne*, no. 82. QUEBEC: shallow pool, River Etamamiou, *Charnay, St. John*, no. 90,076; embouchure de la rivière Ouiatchouan, Val-Jalbert, Lac Saint-Jean, *Victorin*, no. 15,976; Lake Pratt, Co. Temiscouata, *Victorin*, no. 692. MAGDALEN ISLANDS: shallow water near the margins of brackish ponds southwest of Étang du Nord village, Grindstone Island, *Fernald, Long & St. John*, nos. 6756 (distributed as *S. angustifolium*, approaching *S. simplex*), 6757; lagune de l'Étang-du-Nord, *Victorin & Rolland*, no 9460. PRINCE EDWARD ISLAND: pool bordering a bog, Brackley Point Road, *Fernald, Long & St. John*, no. 6759: border of a fresh pond, back of sand hills, Tracadie, *Fernald & St. John*, no. 10,893 (distributed as *S. chlorocarpum*). NOVA SCOTIA: sandy margin of Pottle's Lake, North Sydney, *Bissell & Linder*, no. 19,670; brackish lake, Sydney Mines, *Bissell & Linder*, no. 19,672; Sable Island, *John Macoun*, no. 22,637. MAINE: Pettiquaggamis (Glazier) Lake, August 8, 1893, *Fernald*: Farmington, August 13, 1894, *Fernald*: small pond back of beach, Head Harbor Island, Jonesport, *Cushman & Sanford*, no. 1561; Black Duck Pond, Matinicus, July 13, 1919, *C. A. E. Long*. NEW HAMPSHIRE: margin of Warren Pond, Alstead,

Fernald, no. 553. VERMONT: outlet of Long Pond, Willoughby, July 14, 1896, *G. G. Kennedy*; July 26, 1896, *E. F. Williams*.

GRAY HERBARIUM.

LIMODORUM TUBEROSUM L.

K. K. MACKENZIE.

THE first volume of Gronovius, *Flora Virginica*, is said to have appeared in 1739. In this work Gronovius was assisted by Linnaeus (*Jackson Linnaeus* p. 165).

Very fully and carefully described in this work (p. 110) was a plant from Virginia collected by Clayton to which the name *Limodorum* was given. There has never been the slightest question on the part of any botanical author about the identity of the plant so described. It is the plant which has appeared in our manuals of botany either as *Limodorum tuberosum* or *Calopogon pulchellus*.

The description given by Gronovius is as follows:

"*Limodorum*

Helleborine Virginiana bulbosa, flore-atrorubente. Banist. Plukn. Alm. p. 182.

Gladiolo Narbonensi affinis Planta Mariana, floribus minoribus. Pet. Mus. n. 413.

Orchis verna testiculata aquatica, flore pulcherrimo specioso rubro in spicam tenuem disposito, foliis longis angustis. Clayt. n. 76.

Helleborine radice tuberosa, foliis longis angustis, caule nudo, floribus ex rubra pallide purpurascens Martyn. Cent. I. T. 50. hujus videtur varietas.

Cal. nullus, cujus loco Germen.

Cor. Petala quinque, ovato-lanceolata, aequalia. Labium inferius constituit Nectarium lineare, longitudine petali longitudinaliter barbatur, apice cordato.

Stam. Filamenta vix conspicua. Antherae binae, adnatae corpori lineari arcuato, longitudine corollae, apice appendiculato.

Pist. Germen columnare, longitudine corollae, sub receptaculo floris. Stylus filiformis, adnatus corpusculo lineari. Stigma concavum.

Peric. Capsula columnaris, trivalvis, angulis dehiscens.

Sem. numerosa; scobiforma."

In 1740 there also appeared another work with which Linnaeus had a great deal to do. I refer to Royen, *Florae Leydensis Prodomus*, which is so constantly cited by Linnaeus in his own works as "*Roy. lugdb.*" On page 16 of this work the same plant is again to be found very fully and accurately described.

Linnaeus himself fully described the same plant in various editions of his *Genera Plantarum*, the second published in 1742 (p. 435); the third published in 1743 (p. 333); the fourth published in 1752 (p. 333); the fifth published in 1754 (p. 407). In all of these his only references are to the original descriptions appearing in Gronovius and Royen.

In 1753 in the second volume of the first edition of the *Species Plantarum* p. 950 is found the original description of *Limodorum tuberosum* L. This is as follows:

“*LIMODORUM*.

tuberosum. 1. *LIMODORUM*. Roy. lugdb. 16. Gron. virg. 110.

Act. ups. 1740 p. 21.

Helleborine americana, radice tuberosa, foliis longis angustis, caule nudo, floribus ex rubro pallide purpurascens. Mart. cent. 50. t. 50.

Habitat in America septentrionali.

Plumierii species americanae australis plurimas non vidi.”

It will be noted that in the original description of *Limodorum* by Gronovius there is a reference to Martyn's plate 50. The same reference is also given by Royen, and it again appears in the *Species Plantarum*. Whatever misunderstanding has arisen about the use of the name *Limodorum* has arisen from this reference. The plate in fact illustrates a West Indian orchid, a species of *Bletia*. This species, as illustrated, looks very much like the *Limodorum*, and it is no discredit to Linnaeus that he confused them.

However, it is very plain indeed that what Linnaeus always had primarily in mind, when he used the name *Limodorum*, was the plant described by Gronovius, by Royen, and by himself, from an actual specimen collected by Clayton in Virginia. I do not believe that any one would for a minute argue that merely because a scientist cited a plate from another work when naming and describing a new species from an actual specimen before him that the name given by the scientist should be applied to the plant shown by the plate rather than to the plant actually before the author.

It may be further argued that Linnaeus took his specific name “*tuberosum*” from Martyn's species. But a reference to the Gronovian description of *Limodorum*, will show that Linnaeus merely selected the most suitable of several available names expressing the same thoughts. Even if this were not so, merely borrowing a name from a descriptive phrase does not, under the circumstances of the

present case, require the name to be used for the plant from which the name was borrowed. It must still be used for the plant actually described.

It is then the only proper thing to do to use the name *Limodorum tuberosum* for the plant of the Eastern United States and it is not proper to use it for the West Indian *Bletia*.

Calopogon pulchellus.

The other name by which our handsome orchid has been known to some botanists is *Calopogon pulchellus* (Salisb.) R. Br. That name goes back to the following description:

"*Limodorum*.

"Corolla 1-labiata. Anthera 1, Caveae styli dorso inserta, mobilis. Stylus sub anthera 1-labiatus.

"Pulchellum. 1. L. petalis exterioribus recurvulis, interioribus incurvulis: labio erecto, supra basin lateribus reflexo; apice expanso, late cochleaeformi, acuminulato; disco 3-carinato, deinde piloso. L. tuberosum. Linn. Sp. Pl. ed. 2. p. 1345."

Salisbury Prodr. Stirp. 8. 1796.

It will be noted that while Salisbury gives a description, he was really but giving a new name to *Limodorum tuberosum* L. This was one of the "direct ^{were} and conscious renamings of species already validly named, such as ~~was~~ freely indulged in by Salisbury" to quote the appreciative language of Messrs. Fernald and Weatherby.

In 1805, Willdenow (Sp. Pl. 4: 105) used the name *Limodorum pulchellum* in the genus *Cymbidium* as *C. pulchellum*. He gave no description, merely citing *Limodorum tuberosum* L., Royen, Gronovius, a description by Swartz, Michaux's description of *Limodorum tuberosum* L. and Salisbury's description of *Limodorum pulchellum*.

In 1813 the genus *Calopogon* R. Br. was published (Ait. Hort. Kew (Ed. 2) 5: 204-5). This is as poorly described as can well be imagined. The entire description is "*Calopogon*. Brown mss. Labellum posticum, unguiculatum: laminae barbata. Petala 5 distincta. Columna libera. Pollen angulatum." Only one species was given, namely *Calopogon pulchellus*. It is not described at all, but is based solely on *Cymbidium pulchellum* Willd.¹ and a plate of *Limodorum tuberosum* L. in Curtis magazine (pl. 116).

¹ Swartz had previously published the name *Cymbidium pulchellum* based on *Limodorum tuberosum* L. and *Limodorum pulchellum* Salisb. (Nov. Act. Ups. 6: 75; also Schrader Journ. 2: 220. 1799). His work, however, was apparently not known

From the above one will see that the name *Calopogon pulchellus* is directly based on *Limodorum tuberosum*. All of the authors dealing with the two plants (Salisbury, Willdenow and R. Brown) treated them as the same. The name is one arising from Salisbury's habit of renaming plants, so feelingly characterized by Messrs. Fernald and Weatherby. Under the American code of nomenclature the name of our pretty orchid is *Limodorum tuberosum*. Under the Vienna code one is told that one must substitute the very poorly published name *Calopogon* for the older and very carefully described *Limodorum*. This is certainly an excellent illustration of how carelessly that code was prepared. But even under the Vienna code the name of the species is not *Calopogon pulchellus* but is *Calopogon tuberosus* (L.) B.S.P.

MAPLEWOOD, NEW JERSEY.

THE ARCTIC VARIETY OF *ALOPECURUS AEQUALIS*.

M. L. FERNALD.

THE plant of north temperate regions which passes in America either as *Alopecurus aristulatus* Michx. or as *A. geniculatus*, var. *aristulatus* (Michx.) Torr. has abundant characters to distinguish it from *A. geniculatus* L. of Eurasia, a species locally naturalized in North America. These characters have been clearly set forth by Bicknell¹ and by St. John² and, briefly enumerated, are as follows: more delicate habit, glaucous or pale-green color, less geniculate or depressed culms, less inflated sheaths, longer and more slender pale spikes with spikelets only about 2 mm. long, short straight awn about equaling to barely exceeding the glumes and attached near the middle of the lemma, anthers 0.5–1 mm. long, yellowish; the coarser European *A. geniculatus* having, as its name implies, geniculate stems, a full green color, inflated sheaths, coarser and commonly darker spikes with spikelets about 3 mm. long, a long-exserted and twisted awn attached near the base of the lemma, and brown or purple anthers 1.5–2 mm. long.

to Robert Brown, and forms no part of the history of the name *Calopogon pulchellus* as given by Brown. It is, however, the only basis for the erroneous authorship (*Calopogon pulchellus* (Sw.) R. Br.) given in Gray's Manual, 7th Ed., p. 312. It is also most probable that Willdenow had the name of Swartz in mind, although he does not directly say so.

¹ Bicknell, Bull. Torr. Bot. Cl. xxxv. 472 (1908).

² St. John, RHODORA, xix. 165 (1917).

Although the specific distinctions of the two plants are now well understood, the correct name for *A. aristulatus* seems to have been missed by American students of the group. In Eurasia, where the species occurs and where it is now generally maintained as distinct from *A. geniculatus* L., it long passed as *A. fulvus* Sm. Engl. Bot. xxi. t. 1467 (1805), but since *A. aristulatus* Michx. Fl. Bor.-Am. i. 43 (1803) antedates Smith's name, Michaux's binomial has been used in America. A still earlier specific name, however, is *A. aequalis* Sob. Fl. Petrop. 16 (1799). Sobolewski described *A. aequalis* as differing from *A. geniculatus* in having "*Aristis gluma aequalibus*," the most important diagnostic character of *A. aristulatus* (or *A. fulvus*), and for practically a century *A. aequalis* was cited in Eurasian literature as a synonym of *A. fulvus*. Recently, however, with the impulse to more exact application of priority-principles, the name *A. aequalis* has been revived in Europe by such close students of nomenclature as Schinz & Thellung,¹ Britton & Rendle,² Druce,³ Hanbury⁴ and Lindman⁵ and we should fall in line by accepting for *Alopecurus aristulatus* Michx. (1803) or *A. fulvus* Sm. (1805) the earlier name, *A. AEQUALIS* Sob. (1799).

During the past summer, on the Straits of Belle Isle, Messrs. Long, Wiegand and I became much interested in an aquatic *Alopecurus*, which we found in tundra-pools on both the Newfoundland and the Quebec sides of the Straits. In the first region the plant, with its long ribbon-like leaf-blades floating on the water, suggested *Glyceria fluitans* or *G. borealis*; in the second region, the pool had dried away and the repent stems sprawled loosely on the ground. Both plants, although having very short and scarcely or but slightly exserted panicles only 0.7–3.5 cm. long, have the more important technical characters of *A. aequalis*: small spikelets, short awn inserted high upon the lemma and small pale anthers; but they differ at once from it in their lax habit, short and inflated sheaths and included or but slightly exserted short spike. In all these characters they exactly match the Greenland plant which was set off in 1880 as *A. geniculatus*, var. *natans* J. Vahl. The variety was published by Lange from a manuscript description of Vahl's. Under *A. geniculatus* Lange said:

¹ Schinz & Thellung, Bull. Herb. Boiss. 2me sér. vii. 396 (1907); Viertelj. Naturf. Gesells. Zürich, lxxvi. 291 (1921).

² Britten & Rendle, List Brit. Seed-Pl. and Ferns (1907).

³ Druce, List Brit. Pl. (1908).

⁴ Hanbury ed., Lond. Cat. Brit. Pl. ed. 10 (1908).

⁵ Lindman, Svensk Fanerogamfl. 74 (1918).

"Forma groenlandica hujus speciei excellit thyrso valde abbreviato, saepius vix ultra vaginam superiorem exserto, foliis infer. longe fluitantibus. Haec ut varietas *natans* designata est a beat. J. Vahl (mscr. ined.)."¹

Lange cited seven collections, three of which are represented in the Gray Herbarium. These and material from Iceland perfectly match the specimens secured by us in pools near the Straits of Belle Isle, and later material of the Greenland plant (Disco, August, 1923, *Porsild*) in a less aquatic form is a good match for St. John's plant from Brest on the Labrador Peninsula, St. John's material being of the emerged phase of the plant.

This plant of Iceland, Greenland, northern Newfoundland and eastern Quebec, with the technical characters of *Alopecurus aequalis*, but differing at once from the common plant of more southern latitudes in habit, sheaths and size and degree of exsertion of spike is, then, unquestionably *A. geniculatus* var. *natans* J. Vahl. It is most probable, however, that it was published under the identical name in 1812 from Lapland, Wahlenberg's description under *A. geniculatus* reading:

"β. *natans*: culmo ramoso, foliis natantibus, glumis obtusissimis . . . natat in lacubus sylvarum pasim."²

That the Lapland *A. geniculatus*, var. *natans* Wahlenb. and the plant of Greenland (*A. geniculatus* var. *natans* J. Vahl) are identical is indicated by Simmons who, taking them up as *A. aristulatus*, var. *natans* (Wahlenb.) Simmons,³ stated that "In den Herbarien liegend zahlreich Exemplare aus dem nördlichen Schweden und Norwegen vor, ferner auch aus Sibirien und Grönland."

Under the earliest specific name this arctic variety becomes

ALOPECURUS AEQUALIS Sob., var. ***natans*** (Wahlenb.), n. comb. *A. geniculatus*, β. *natans* Wahlenb. Fl. Lapp. 22 (1912); also (independently) J. Vahl in Lange, Consp. Fl. Groenl. 156 (1880). *A. aristulatus*, var. *natans* (Wahlenb.) Simmons, Arkiv för Bot. vi. no. 17: 4 (1907). *A. aristulatus*, var. *Merriami* St. John, Vict. Mem. Mus. Mem. 146: 42 (1922) at least in part, perhaps not *A. Howellii*, var. *Merriami* [misspelled *Merrimani*] Beal, Grasses N. A. ii. 278 (1896). Distinguished by lax habit; stems often repent or floating; leaf-sheaths inflated; the upper 1-5 cm. long; spikes 0.7-3.5 cm. long, often purple-tinged; the base included in the sheath or finally exserted 1-5 cm.—Northern Norway and Sweden, Siberia, Iceland, Greenland,

¹ Lange, Consp. Fl. Groenl. 156 (1880).

² Wahlenb. Fl. Lapp. 22 (1812).

³ Simmons, Arkiv. för Bot. vi. no. 17: 4 (1907).

northern Newfoundland and eastern Quebec. The following American specimens are characteristic. GREENLAND: Sarkak, 1870, *Berggren*, July 18, 1871, *T. M. Fries*, August 12, 1921, *A. E. Porsild*; Blavedal, August, 1912, *Th. Porsild*; Brede Dal, S. Disko, August 8, 1923, *A. E. Porsild*; Frederiksdal, August 1, 1889, *Lundstrom*. NEWFOUNDLAND: pool in tundra, Boat Harbor, Straits of Belle Isle, *Fernald, Wiegand & Long*, no. 27,505. QUEBEC: exsiccated pond on tableland west of Blanc Sablon, *Wiegand*, no. 27,506; sandy pond-shore, Anse des Dunes, Brest, *St. John*, no. 90,117.

Contrasted with var. *natans* the more southern form of *A. aequalis* has culms more ascending at least above the sometimes submersed base and usually taller: leaf-sheaths only slightly inflated; the upper 3.5–10 cm. long: spikes 2.5–8 cm. long, usually not purple-tinged and finally long-exserted (0.3–2.3 dm.).

St. John identifies with the Iceland and Greenland material the plant of islands of Bering Sea described by Beal as *A. Howellii*, var. *Merriami*. Such material as the writer has seen, some of Merriam's original collection from St. George Island and several sheets collected by J. M. Macoun on St. Paul Island, seem, however, much stiffer and coarser than var. *natans* and to have less inflated sheaths and longer-exserted spikes. Should they eventually prove to be referable to var. *natans* the latter name, of course, must be maintained for them, having unquestioned priority. Some other specimens identified by St. John with the Iceland and Greenland plant because of a purplish tinge in the spikelets, depart from it in all other characters and seem better left with the large southern extreme of *A. aequalis*: such plants as Bourgeau's from Saskatchewan and Shear's no. 1502 from Colorado. Although the color is a fair secondary character it too often breaks down: Porsild's material from Greenland shows some spikes with purple tinge, some without; the aquatic plant of the Straits of Belle Isle is similarly variable.

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FURTHER CASES OF INCONSTANCY IN COLOR-FORMS.—On my place in Wilton, Conn., is a narrow strip between grape-vines and a path. Being on the north of the vines it is very much shaded and little will grow there. For a number of years *Impatiens biflora* has taken possession. I do not remember the flowers at first, but for some years they have been spotless except for a few tiny dots in the "slipper."

A plant with dotted flowers was a rarity. This year (1925) the flowers are so heavily dotted that they are literally "pink" (a bright pale scarlet), for the dots are so nearly suffused as almost to cover the yellow (or orange). I thought I had found two plants with dotless flowers, but examination proved they were fully dotted up to the throat. We have had a very wet summer, mostly very warm; whether that has had anything to do with the change, I do not know.

I think it was in 1919 that a plant of *Lobelia cardinalis* was brought to me from Redding, Conn. The flowers were white, except that each corolla-lobe was tipped for perhaps one-sixteenth of an inch with pink (not red). The next year the pink extended inward about double the distance. The third year the color reached halfway to the middle. The fourth year the flower was all colored, the outer part nearly to the cardinal red usual in the species, the center only pink. That year a small plant about four feet away, which must have come from the first, blossomed, the natural red. The winter after, both plants died.—ANNA E. CARPENTER, Wilton, Connecticut.

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